

**NOMINATION & CEREMONY REPORT**

**HISTORIC ENGINEERING MARKER**

**at the**

**GRENFELL STREET POWER**

**AND CONVERTER STATIONS**



From the  
Engineering Heritage Branch  
IEAust SA Division

Grenfell Street Power House, 1901

Issue: 02

Date: 17 July 1996

300/22/10 — 17/7/96 IEAust DigInk



# **HISTORIC ENGINEERING MARKER at the GRENFELL STREET POWER AND CONVERTER STATIONS**

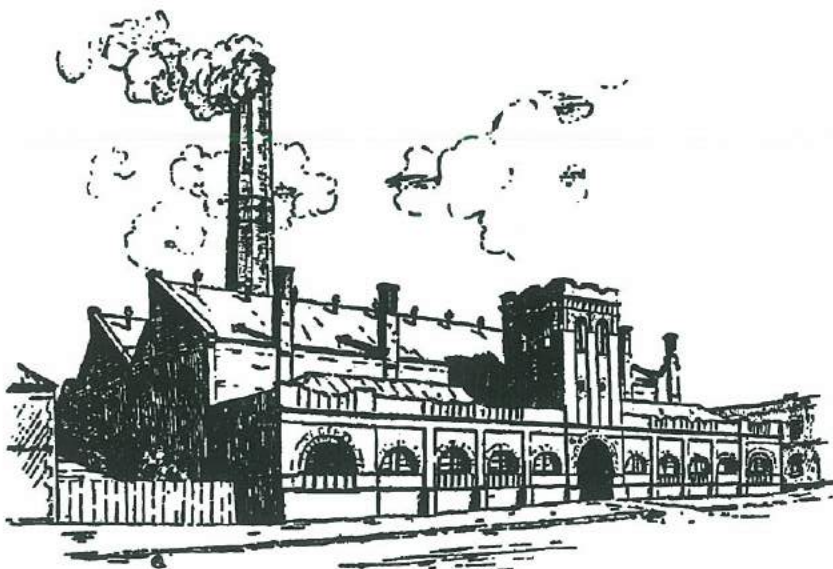
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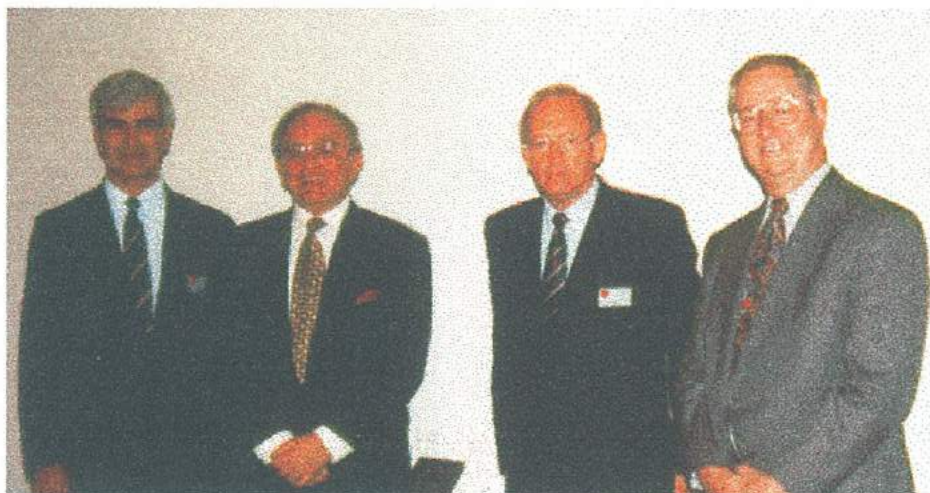
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Grenfell Street Power House, 1901



Official guests at the plaquing ceremony (from left to right): Mr Peter Koukourou, President of the South Australian Division of IEAust; the Right Honourable Henry Ninio, Lord Mayor of the City of Adelaide; Professor Douglas Clyde, National President IEAust; Mr Clive Armour, General Manager ETSA



The plaque



# **HISTORIC ENGINEERING MARKER: GRENFELL STREET POWER AND CONVERTER STATIONS NOMINATION AND CEREMONY REPORT**

## **CEREMONY:**

About 60 invited guests attended the Historic Engineering Marker dedication on Thursday 6 April 1995. The ceremony was held indoors (because of the weather) in the Tandanya Aboriginal Cultural Institute, formerly part of the power station machine hall. A number of Institution members took a break from the IEAust National engineering Conference which was being held in Adelaide.

Participants in the plaquing ceremony were:

The Right Honourable Henry Ninio, Lord Mayor of the City of Adelaide

Mr Clive Armour, General Manager ETSA

Professor Douglas Clyde, National President IEAust

Mr Peter Koukourou, President of the South Australian Division of IEAust

Mr Deane Kemp, Chairman of the South Australian Division's Heritage Branch Committee

## **PUBLICITY:**

The following media release was prepared by ETSA's public relations consultants who assisted in preparations for the plaquing ceremony:

FOR IMMEDIATE RELEASE April 6, 1995

## **ENGINEERS TURN IT ON FOR ELECTRICITY**

The centenary of public electricity supply in Adelaide will be celebrated in the city today at the site of Adelaide's first power station - part of which is now the Tandanya Aboriginal Cultural Institute.

As part of the celebration the Grenfell Street Power Station and East Terrace Converter Stations will be marked with an Historic Engineering Marker Plaque by the Institution of Engineers. It will be the sixth South Australian site to be honoured by the Institution under the Australian Historic Engineering Plaquing Program which aims to draw public attention to important engineering works and the benefits the community has derived from them.

National President of the Institution of Engineers, Professor Douglas Clyde, said that the stations were an important part of South Australia's history.

"These are the stations which generated the first public electricity supply to light the City of Adelaide and to run Adelaide's electric tramway system," said Professor Clyde.

They dramatically changed the way of life in the city and made a significant contribution to the economic development of South Australia."

"So many people drive past the site every day but do not realise the importance of its history.

"We rely so much on electricity that it is hard to imagine a way of life without it, yet before these stations were built 100 years ago there was none."

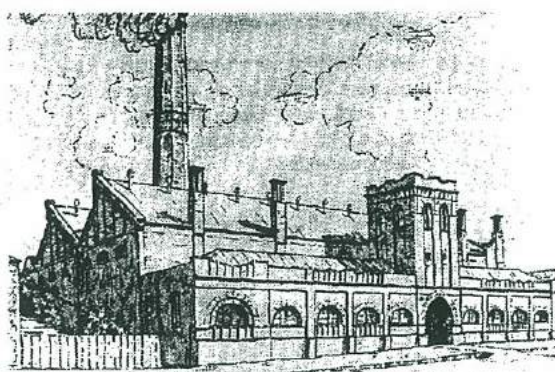
The stations were operated by The South Australia Electric Light and Motive Company which was incorporated in 1895 and succeeded by the Adelaide Electric Supply Company (1904-1946) and then the Electricity Trust of South Australia.

Three main buildings comprise the Grenfell Street Power and Converter Stations. These are the Grenfell Street Power Station (now known as the Tandanya Aboriginal Cultural Institute), the AESCo (Adelaide Electricity Supply Company) Converter Station and the MTT (Municipal Tramways Trust) No 1 Converter Station which has been adapted to provide modern office accommodation.

Following the ceremony, and in response to the media release, Deane Kemp and Richard Venus (Heritage Branch Committee member) participated in a 45 minute talkback session on ABC radio, discussing the electrification of Adelaide, hearing listener reminiscences, and answering questions.

The following article, including a line drawing of the original 1901 power station building, appeared in the local city paper:

### **Centenary of city electricity supply celebrated at Tandanya**



The Grenfell St Power Station in 1901.

A CEREMONY at Tandanya this month celebrated a centenary of electricity supply to the City of Adelaide.

Tandanya Aboriginal Cultural Institute, Grenfell St, was originally part of Adelaide's first power station, belonging to the SA Electric Light and Motive Power Company — ETSA's forerunner.

As part of the celebrations, the Institution of Engineers national president Professor Douglas Clyde unveiled a plaque at Tandanya.

"(The Grenfell St Power and East Tce Converter Stations) generated the first public electricity supply to light the City of Adelaide and to run Adelaide's electric tramway system," Professor Clyde said.

"They dramatically changed the way of life in the city and made a significant contribution to the economic development of SA."

A souvenir leaflet was also produced for the ceremony and is included as Appendix 1.



# **HISTORIC ENGINEERING MARKER: GRENFELL STREET POWER AND CONVERTER STATIONS CEREMONY**

About 60 invited guests attended the Historic Engineering Marker dedication ceremony held indoors (because of the weather) in the Tandanya Aboriginal Cultural Institute, formerly part of the power station machine hall.

## **OPENING: (Deane Kemp, Chairman)**

Good morning and welcome to the Institution of Engineers ceremony to recognise the former Grenfell Street power station and East Terrace converter stations and the contributions they have made to the City of Adelaide.

Some 11 years ago the Institution's Board of Engineering introduced the Australian Historic Engineering Plaquing Programme. It is therefore pleasing to see the whole board with members from around the nation here for this activity.

The plaquing programme aims to attract public attention to historic engineering works and increase community awareness of the contribution of engineering to Australia's development of the welfare of its people.

Professional engineering has made a significant contribution to Australia over the past 200 years and indeed I think I can safely say engineering makes modern society possible and pervades most services and items we use.

To date some 37 works have been plaqued with the Grenfell Street power station being the sixth in South Australia and the first in the City of Adelaide.

It is just 100 years since the formation of the company which has progressed to become the Electricity Trust of South Australia and 94 years since the commissioning of the power station behind me. There is the 70 year old East Terrace converter station just to the south and next to it is the 88 year old electric tramway converter station now used by ETSA as an office. Collectively they have "turned on" electricity for the city.

Clive Armour will outline more of the electricity story after which Prof Doug Clyde will dedicate and unveil the plaque. We would then be pleased if the Lord Mayor would accept the plaque. IEAust Division President Peter Koukourou will then close proceedings.

## **Mr Clive Armour, General Manager ETSA**

Just over 100 years ago we would have been standing on a vacant site. We would have risen this morning in darkness and would have dressed by the light of candles. Water for our morning coffee would have been boiled on a wood fire stove.

Many of us would have walked to work where, if it was a hot day, there would have been no airconditioners or fans to relieve us from the heat. No photocopiers, no faxes, no computers — in fact the names for these electrically operated machines would be unheard of.

We have come to rely on electricity so much that it is hard to image life without it. It warms us, it lights our way, it improves our efficiency in the workplace, it feeds us, it comforts us.

And this is where it began for South Australians.

The company that first supplied public electricity to the City of Adelaide, the South Australia Electric Light And Motive Power Company, was incorporated in 1895. At the beginning electricity was mainly used to power arc lamps and traction engines. The company was succeeded by the Adelaide Electricity Supply Company and then the Electricity Trust of South Australia.

The site being honoured today with an Institution of Engineers historic marker plaque is made up of three main facilities. What we know now as The Tandanya Aboriginal Cultural Institute was the Grenfell Street power station which included an office block and turbine hall. Two converter stations were located on East Terrace.

The Adelaide Electricity Supply Company converter station was fully operational from 1923 to 1929 and then provided a small backup capacity until the last of direct current was removed from the city in 1967 with the removal of a lift motor. The building is still in use as a substation.

The Municipal Tramways Trust No 1 Converter Station powered Adelaide's electric tram system from 1909 to 1956. With the introduction of private motor bus operators came fierce competition as the MTT competed for passengers. So fierce was the competition that an electric tram would suddenly reverse its direction if passengers were spotted on the other side of the road. However, the triumph of the electric trams over the internal combustion engine was short lived with orders placed for Mack buses in 1924. The last electric tram service ran on February 2, 1957.

The MTT No 1 Converter Station has now been adapted to provide modern office accommodation while preserving its industrial character.

The supply of electricity to the City of Adelaide dramatically changed the way of life and made a significant contribution to the South Australian economy.

Today, as we at ETSA look forward as well as backwards, we see an exciting future for electricity in a myriad of business and leisure applications.

The placement of an historic engineering plaque on this site by the Institution of Engineers will ensure that the site is recognised as an important part of this state's history. On behalf of ETSA, and those pioneers now long gone, thank you, President and members of the Institution.



## **Professor Douglas Clyde, National President IEAust**

I am delighted to be here when Adelaide receives the rain Perth is needing so badly. We have been made very aware of Heritage matters by someone whom all of the Adelaide members will recall because he wrote “They Built South Australia”. Denis Cumming, who retired to Perth, died earlier this year while out sailing — which was obviously one of his other passions. He brought the same concern about heritage to Western Australia and was a driving force behind our heritage program. Both states will miss him. He would have approved of this plaquing ceremony.

These buildings are a monument to the contributions made by engineers to the development of South Australia. It’s interesting to note the same emphasis 100 years ago on private ownership of utilities as there is now. The generating and distribution plant were designed by F W Wheadon, BSc, MIEE, MIEAust, Chief Engineer and General manager of the SA Electric Light & Motive Power Company. Wheadon was also a foundation member of the Institution of Engineers, Australia.

The original machinery included Willans reciprocating steam engines generating 150 kilowatts at 200 volts DC; later, Tosi Ganz 200 volt AC sets were added. Distribution was initially by underground cable which provided clean, convenient power for street and shop lighting, and for electric motors driving lifts and machinery — a sharp contrast with the use of steam plant on the premises.

The MTT No1 Converter Station was commissioned in 1909 and converted AC from this power station to 600 volt DC. It forms part of the tramway system designed under Sir William Goodman, KCB, MICE, MIEE, MIEAust, which permitted a revolution in public transport. Electric trams assisted the development of the inner suburbs which, from 1915, led to the accelerated growth of the metropolitan area.

These installations are a fine example of the way in which the community benefits from the work of engineers. On behalf of the Institution of Engineers, Australia, I dedicate this plaque and present it to the City of Adelaide.



## **The Right Honourable Henry Ninio, Lord Mayor**

On behalf of the City of Adelaide, I extend a very warm welcome to you on the occasion of the electricity supply centenary.

The genesis of electricity usage started back in the early 1880's when the Superintendent of Telegraphs, Charles Todd, set up a dynamo on top of the Post Office tower to generate enough electricity to power an electric light.

Those early days were pioneering times, and in fact until 1899 individual shops, hotels and theatres were supplied with electricity by privately-owned power plants, such as the Thompson family, who operated their own plant in Bank Street and supplied electric light to the Theatre Royal, the Eagle Tavern and other businesses. The Thompsons also offered to help the City Council with street lighting.

Meanwhile, the South Australian Electric Light Company installed the first lighting in commercial premises in 1882, known as Kither's Butchers in Rundle Street. And just before the turn of the century in 1898, Adelaide City Council signed an agreement with S.A. Electric Light And Motive Power Company to light up the City of Adelaide. Just imagine the excitement of the era, when 30 "DC" arc lamps illuminated South Terrace, King William Street and O'Connell Street.

From these humble beginnings, we now take electricity very much for granted. It's an energy source that powers so much of our lives ... it's hard to imagine daily living without it.

Speaking on behalf of the past leaders of our city, as Lord Mayor in 1995, it's gratifying to know that the city has played an important part in this industry which has now grown into the dynamic corporate entity known today as ETSA.

You could say we helped "empower" the industry!

Ladies and Gentlemen, it is with great pleasure that I accept this plaque on behalf of the City.



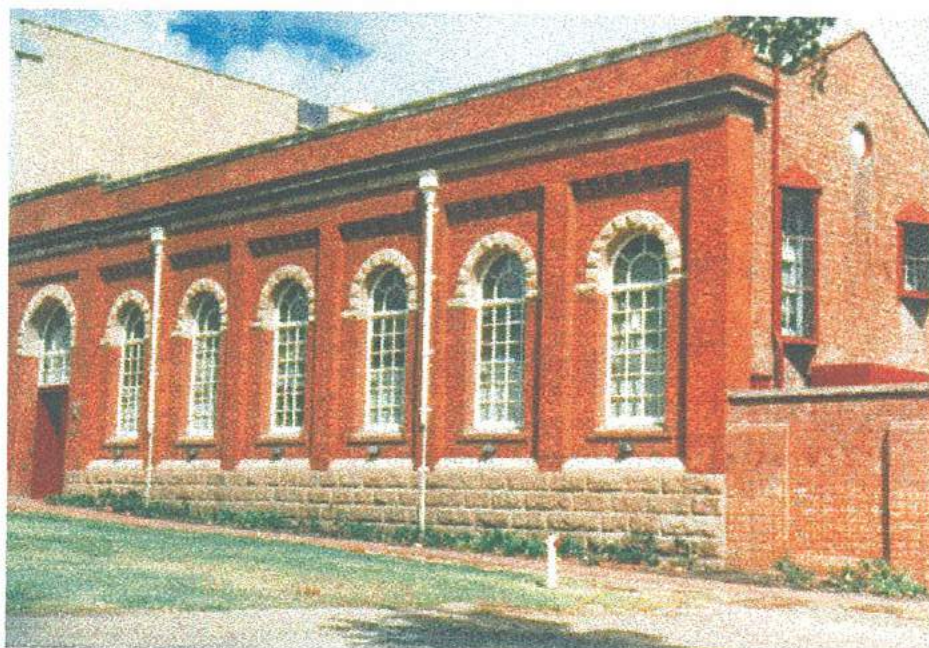


The Grenfell Street Power Station, now the Tandanya Aboriginal Cultural Institute. The present facade is part of extensions carried out in 1912 which were built over the original power station building. The hotel at the right was, for a time, known as "The Electric Light Hotel".

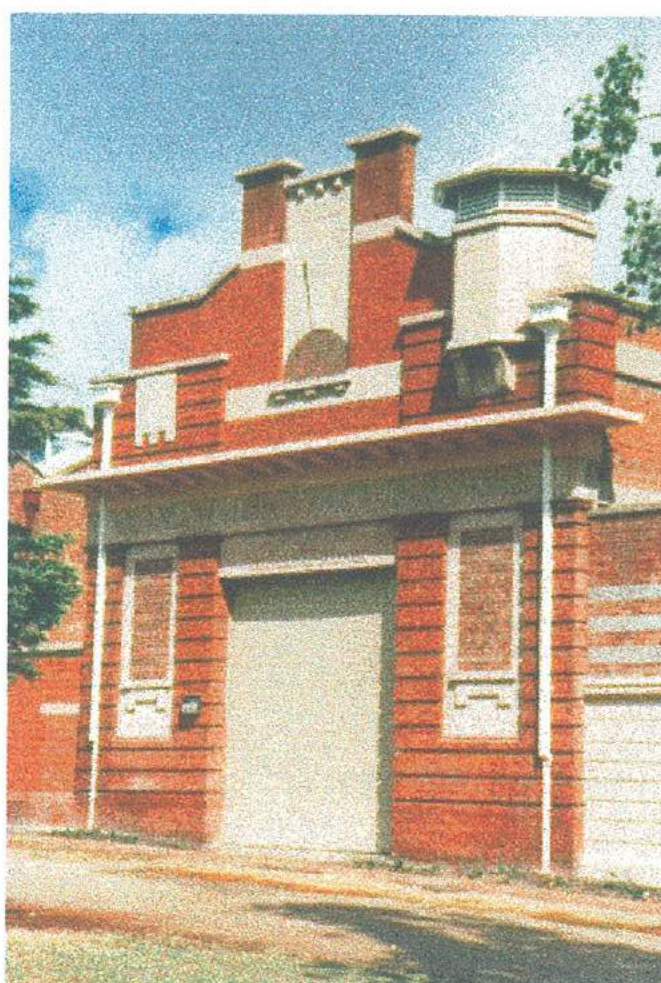


The Grenfell Street Power Station in 1946. This picture appeared in "Fifty Years of Progress", the book produced by the Adelaide Electric Supply Company to commemorate its 50 year history.





The Municipal Tramways Trust No1 Converter Station



The Adelaide Electric Supply Company Converter Station



**HISTORIC ENGINEERING MARKER:  
GRENFELL STREET POWER AND CONVERTER STATIONS  
COMMEMORATIVE PLAQUE NOMINATION**

**PREAMBLE:** Grenfell Street Power and Converter Stations comprise three main buildings and interconnecting yards:

1. Grenfell Street power station building (office block and turbine hall)
2. AESCo converter station
3. MTT No1 Converter Station (machine room, transformer room, and battery room)

**NOMINATION:**

The following work is nominated for an Historic Engineering Marker

**Name of Work:** Grenfell Street Power and Converter Stations

**Location:** Grenfell Street and East Terrace, Adelaide

**Owner:** Tandanya Aboriginal Cultural Institute (power station building)

Electricity Trust of South Australia (converter stations and yards)

Adelaide City Council (plaque site)

The owners have been advised of the nomination of the work and confirmation of their willingness to participate is awaited

**Access to the site:**

Power station building: semi-public (Tandanya Aboriginal Cultural Institute)

AESCo converter station: restricted (houses an operational electricity substation)

MTT No1 Converter Station: limited (operational office for ETSA)

**Future care and maintenance of the work:**

Buildings have been partially restored and recycled as a museum and cultural centre, and an office building; the AESCo converter station is still used as an operational substation

**Name of sponsors:**

To be confirmed

**Additional Supporting information:**

1. **Name of Work:** Grenfell Street power station building  
**Year of construction:** Work commenced in 1900  
Officially opened on 1 November 1901  
Major extensions (present facade) commenced in 1912  
**Period of operation:** 1901 - 1925 when it was decommissioned
2. **Name of Work:** AESCo converter station  
**Year of construction:** Work commenced in 1923  
**Period of operation:** 1923 - 1967 as DC converter station; still in use as a substation
3. **Name of Work:** MTT No1 Converter Station  
**Year of construction:** Work commenced in 1908  
**Period of operation:** 1909 - 1956



## **All Buildings Engineering Heritage Significance:**

**Physical condition:** very good

**Technological/scientific value:** low (plant removed)

**Historical value:** high

**Social value:** high

**Townscape value:** high

**Rarity:** buildings associated with Adelaide's first public electricity supply and electric tramways

**Representativeness:** —

**Contribution to the region:** Significant for Adelaide

**Contribution to engineering:** Electricity supply facilitated development of the city and state

**Persons associated with the work:** F W H Wheadon. BSc, MIEE, MIEAust

Sir W G T Goodman. KCB, MICE, MIEE, MIEAust

**Integrity:** Buildings remain; fabric is heritage listed

**Authenticity:** —

**Comparable works in Australia or overseas:** —

**Statement of significance:** see attached

**Citation:** see attached

### **Attachments to submission:**

Item 42, Adelaide — Engineering and Industry, March 1992

Adelect, 1982, No 3

The No1 Converter Station Visitor's Guide, 1993

Electricity Supplies to South Australians, Donovan and Associates, February 1993

### **Proposed location of plaque:**

North west corner of Rymill Park, adjacent power station building

Chairperson of SA Division Heritage Branch



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## Grenfell Street Power and Converter Stations

location Corner Grenfell Street and East Terrace,  
Adelaide, South Australia

owner Tandanya Aboriginal Cultural Institute  
(power station), ETSA Corporation  
(converter stations)

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the plaque

type **Historic Engineering Marker**

location On a ground level plinth, east of the north-east corner of the Tandanya building

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The buildings and interconnected yards are associated with Adelaide's first public electricity supply and its electric tramways. The power station opened in 1901 and supplied Adelaide's first public lighting. The present facade is part of an extension undertaken in 1912. The AESCo converter station was commissioned in 1923 and continued to operate until 1967. The tramways converter station originally took AC supply from Grenfell Street until the MTT's own power station at Port Adelaide was completed in 1911.

The plaque was dedicated in 1995, 100 years after the incorporation of the company which became the Adelaide Electric Supply Company and, in turn, the Electricity Trust of South Australia.

plaque text

### **Grenfell Street Power & East Terrace Converter Stations**

Adelaide's first public electricity supply was provided from this site by a company formed in 1895. ETSA and the Adelaide Electric Supply Company (1904–1946) are the successors of that firm. Designed by F W Wheadon, BSc, MIEE, MIEAust, the power station operated from 1901 to 1925 and the adjacent converter station from 1923 to 1967. From 1909 to 1956, the No1 Converter Station supplied power to Adelaide's electric tramway system which was designed by Sir W G T Goodman, KCB, MICE, MIEE, MIEAust.

Dedicated by the Institution of Engineers, Australia, the Electricity Trust of South Australia and the Adelaide City Council, 1995.



**Frederick William Herbert Wheadon**

(1872–1947)

*Wheadon studied engineering in London and worked for the Brush Electrical Engineering Company and the City of London Electric Lighting Company where he was engineer-in-charge of the Bankside power station.*

*He came to Adelaide in 1899 as resident engineer for the South Australian Electric Light and Motive Power Company (later to become AESCo — the Adelaide Electric Supply Company). Under his direction, the company built the Grenfell Street power station to supply street lighting in the city. AESCo extended supply into nearby suburbs and Wheadon began planning a new power station at Osborne, near Port Adelaide. The estimated cost was one million pounds and the station went into service in 1923.*

*Wheadon remained in charge of AESCo for 48 years until its assets were acquired by the Government to establish the Electricity Trust of South Australia in September 1946. Wheadon retired in December and died the following year, aged 74.*



The Institution of Engineers, Australia  
Historic Engineering Marker  
Ceremony Grenfell Street Power and  
East Terrace Converter Stations

April 6, 1995

#### PROGRAM

##### WELCOME ADDRESS

Mr Deane Kemp, FIEAust, CPEng

##### SUPPORTING ADDRESS

Mr Clive Armour,

General Manager, ETSA

##### UNVEILING OF HISTORIC ENGINEERING MARKER AND PRESENTATION TO THE CITY OF ADELAIDE

Professor Douglas Clyde,

FIEAust, CPEng, National President,

The Institution of Engineers, Australia

The Lord Mayor, Mr Henry Ninio

##### CONCLUDING REMARKS

Mr Peter Koukourou FIEAust, CPEng

#### THE AUSTRALIAN ENGINEERING PLAQUING PROGRAM

This program has been operated by the IEAust since 1984 as a means of attracting public attention to historic engineering objects and sites and increasing awareness of the significant contribution made by engineers to the development of Australia and the welfare of its people.

The Grenfell Street Power and East Terrace Converter Stations are the sixth engineering work in South Australia to be honoured with an Historic Engineering Marker Plaque.

# 100 YEARS OF PUBLIC ELECTRICITY

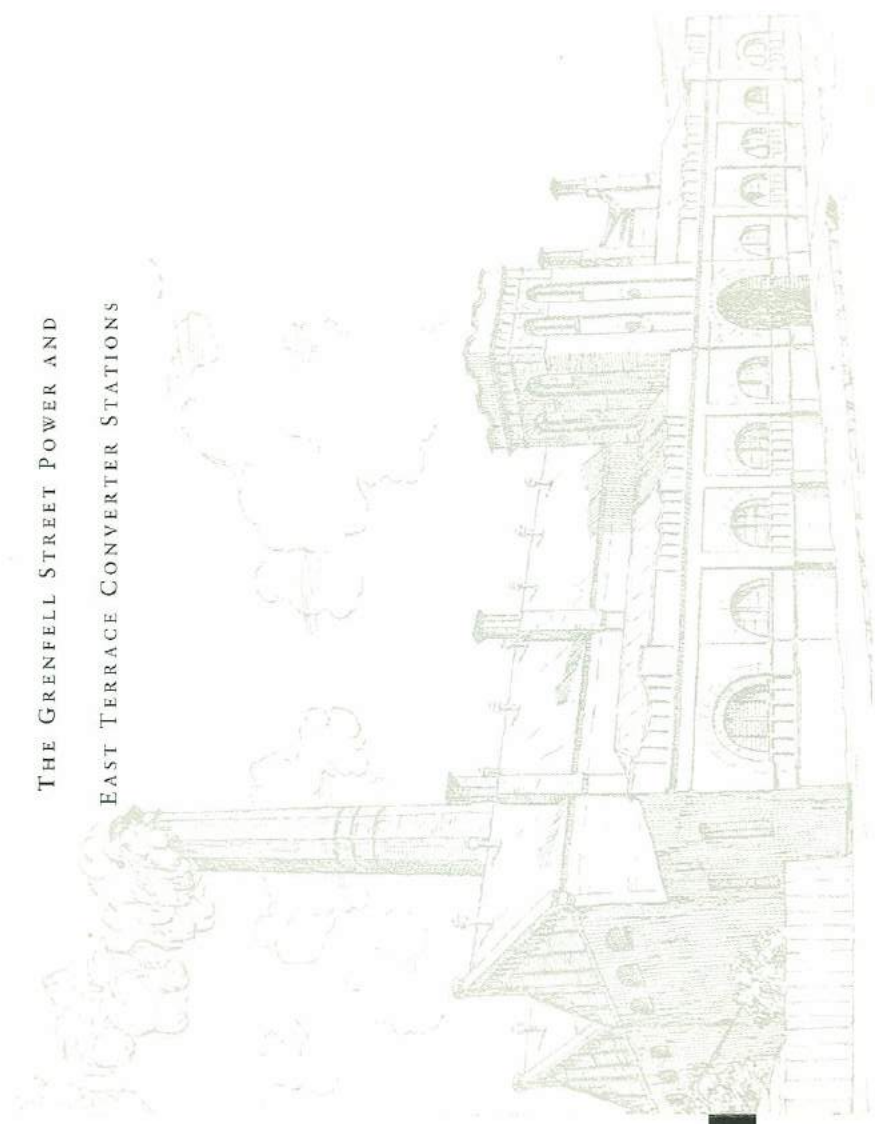
## THE GRENFELL STREET POWER AND EAST TERRACE CONVERTER STATIONS



The  
Institution of Engineers,  
Australia



ETSA





The Grenfell Street Power and East Terrace Converter Stations mark the site from which The South Australia Electric Light and Motive Power Company generated the first public electricity supply to light the City of Adelaide.

The company, which was incorporated in 1895 was succeeded by the Adelaide Electric Supply Company (1904-1946) and then ETSA. The power and converter stations also supplied the electricity for Adelaide's electric tramway system.

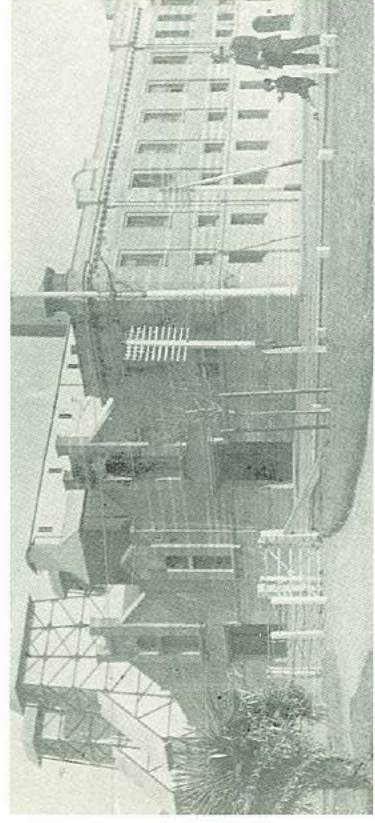
Three main buildings comprise the Grenfell Street Power and East Terrace Converter Stations.

## GRENFELL STREET POWER STATION BUILDING

The Grenfell Street power station was officially opened on November 1, 1901 and operated until 1925.

Including an office block and turbine hall, it was designed by F.W. Wheadon, BSc, MIEE, MIEAust. Major extensions were carried out in 1912 so that what we know now as the Tandanya Aboriginal Cultural Institute is actually a third larger than the original building.

The supply of electricity to businesses and private residences from the power station made a significant contribution to the amenity of the city and the economic development of South Australia.

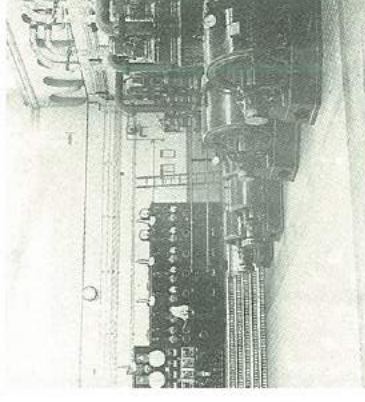


THE GRENFELL STREET POWER STATION

## AESCO CONVERTER STATION

The AESCo (Adelaide Electricity Supply Company) converter station was fully operational from 1923 until 1929 and then provided a small backup capacity until the last of the DC (direct current) was removed from the city in 1967.

It was also designed by F.W. Wheadon and is still in use as a substation.



THE ENGINE ROOM OF THE GRENFELL STREET POWER STATION

## MTT No 1 CONVERTER STATION

The MTT (Municipal Tramways Trust) No1 Converter Station powered Adelaide's electric tram system from 1909 to 1956.

Designed by Sir W.G.T. Goodman, KCB, MICE, MIEE, MIEAust, it included a machine room, transformer room and battery room.

Its most impressive feature is the front elevation which is based on the Romanesque Revival style.

The date stone (dated 1908) of polished granite, to the right of the main door, presents a mystery: no one today knows why the Maltese Cross and the Star of David were chosen as ornaments.

The No1 Converter Station, which was purchased by ETSA in 1963, was entered in the Register of State Heritage Items on February 14, 1985. The building has now been adapted to provide modern office accommodation while preserving its industrial character and heritage.